

LISTING OF THE CLAIMS

1. -35. (Canceled)

36. (Previously Presented) A thermal cycling device, comprising:

a sample block assembly;

an optical detection system; and

a sample well tray holder including a tray-receiving region configured to hold a sample well tray,

wherein the sample block assembly and sample well tray holder are independently translatable to position a sample well tray with nucleic acid amplification samples into alignment with the sample block assembly and the optical detection system.

37. (Previously Presented) The thermal cycling device of claim 36, wherein the optical detection system is adapted to remain substantially stationary during insertion and removal of the sample well tray from the thermal cycling device.

38. (Previously Presented) The thermal cycling device of claim 36, wherein the sample block assembly comprises a sample block for contacting the sample well tray.

39. (Previously Presented) The thermal cycling device of claim 38, further comprising a positioning mechanism configured to translate the sample block.

40. (Previously Presented) The thermal cycling device of claim 39, wherein the positioning mechanism comprises a plurality of links.

41. (Previously Presented) The thermal cycling device of claim 40, wherein the positioning mechanism comprises a motor to rotate the plurality of links.

42. (Previously Presented) The thermal cycling device of claim 36, wherein the thermal cycling device is a real-time PCR machine.

43. (Previously Presented) A method of performing nucleic acid amplification on a plurality of biological samples positioned in a sample well tray in a thermal cycling device, comprising:
placing the sample well tray onto a tray-receiving region of a sample well tray holder;
independently translating the sample well tray holder and a sample block assembly to engage the sample well tray to the sample block assembly and to align the sample well tray with an optical detection system; and
thermally cycling the device to provide nucleic acid amplification.

44. (Previously Presented) The method of performing nucleic acid amplification of claim 43, further comprising:

maintaining the optical detection system substantially stationary.

45. (New) A thermal cycling device, comprising:

a sample block assembly;

an optical detection system, wherein the optical detection system; and

a sample well tray holder including a tray-receiving region configured to hold a sample well tray,

wherein the sample block assembly and sample well tray holder are independently translatable to position a sample well tray with nucleic acid amplification samples into alignment with the sample block assembly and the optical detection system,

wherein alignment comprises translation of the sample well tray holder to bring the optical detection system and the nucleic amplification samples into direct optical alignment.

46. (New) The thermal cycling device of claim 45, wherein the optical detection system is adapted to remain substantially stationary during insertion and removal of the sample well tray from the thermal cycling device.

47. (New) The thermal cycling device of claim 45, wherein the sample block assembly comprises a sample block for contacting the sample well tray.

48. (New) The thermal cycling device of claim 47, further comprising a positioning mechanism configured to translate the sample block.

49. (New) The thermal cycling device of claim 48, wherein the positioning mechanism comprises a plurality of links.

50. (New) The thermal cycling device of claim 49, wherein the positioning mechanism comprises a motor to rotate the plurality of links.

51. (New) The thermal cycling device of claim 45, wherein the thermal cycling device is a real-time PCR machine.

52. (New) A method of performing nucleic acid amplification on a plurality of biological samples positioned in a sample well tray in a thermal cycling device, comprising:

placing the sample well tray onto a tray-receiving region of a sample well tray holder;
independently translating the sample well tray holder and a sample block assembly to engage the sample well tray to the sample block assembly and to align the sample well tray with an optical detection system, wherein to align comprises translating the sample well tray holder to bring the optical detection system and the nucleic amplification samples into direct optical alignment; and

thermally cycling the device to provide nucleic acid amplification.

53. (New) The method of performing nucleic acid amplification of claim 43, further comprising:

maintaining the optical detection system substantially stationary.